

TRANSREFLECTOR ANTENNA FOR
WIRELESS COMMUNICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

A compact lightweight antenna for receiving microwave direct line of sight
5 wireless data signals used in services such as Local Multipoint Distribution Services
(LMDS). The antenna provides for precise control over isolation of polarized signals.
The antenna consists of an external parabolically shaped dome formed of a suitably
resilient material such as thermoplastic. A polarizing conductive grating is formed on
the interior surface of the dome and serves as a transreflector for initially passing
10 received radiation having a vertical polarization. A twist reflector disposed at a point
along an axis defined by the conductive grating reflects the received radiation, back in
the direction of the transreflector with a different polarization. The now differently
polarized energy is reflected by the parabolically shaped conductive grating at a feed
point located in the center of the twist plate. The transreflecting element may be
15 manufactured by providing a substrate that has been printed and etched and/or a film
nonconductive substrate which has been silk screened with a conductive ink. In each of
these cases in a preferred embodiment, the substrate or carrier film becomes an integral
part of the mold in the resulting article.

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